Docket No.: LSI-006
Serial No.: 10/660,317

## REMARKS/ARGUMENTS

Claims 1-33 were presenting the application. Claims 5, 17-22 and 28-33 have been cancelled. Claims 14-16 and 23-27 have been withdrawn. Claims 1, 2, 3, 8-10 and 12-13 are amended. New claims 34-46 have been added. Claim fees for one additional independent claims are believed required, and are submitted here with.

Amendments to the Claims

Claim 1 is amended to require that the reflector element has an asymmetrical shape. Support is found in FIG. 1 and/or in FIG. 3.

Claims 2 and 3 are amended to specify that the angle of reflection from the reflector element is "from nadir". Support can be found in Claim 11. Claims 2 and 3 are also amended to Correct the antecedent basis of the reflector elements.

Claims 8-10 are amended to specify that the reflector elements are "placed in locations" symmetrically or asymmetrically, around the light source. Support can be found at page 2, line 19.

Claims 12 and 13 are amended to specify that the plurality of cross-sections of the reflector element in the respective vertical and horizontal planes are "of different sizes". Support is found in Fig. 1 and/or in Fig. 8.

New claim 34 is added. In addition to the support found in Claim 1 as originally filed, the following support is also provided: the reflector elements having "a bottom edge", at page 5 lines 6-8; each reflector having "a front surface and a back surface", found in Figs. 1, 3 and/or 4A; "the front surface of the first reflector element and the back surface of the second reflector element are separated to provide an opening", found in Figs. 1, 3 and/or 4A; and "through which can be emitted light from the light source, which is emitted above the bottom edges and is reflected from the front surface of the first reflector element", found in the preamble of Claim 1 as filed and at page 5 lines 6-8.

New claim 41 is added. In addition to the support found in Claim 1 as originally filed, the following support is also provided: "each reflector element having a front reflective surface and a back surface, an inner portion that is disposed a first radial distance from the center", "an outer portion disposed a second radial distance from the center that is greater than the first radial distance", and 'the front surface of the outer portion of the first reflector surface faces toward the

back surface of the inner portion of the second reflector element across an opening there between", found in Figs. 1, 3 and/or 4A; and "emitted light from the center of the reflector assembly that reflects off of the front surface of the first reflector element, passes through the opening between the outer portion of the first reflector element and the back surface of the second reflector element", found in Fig. 5 and at page 5 lines 19-24.

The Applicant believes that the added claim matters draw ample and sufficient support from the Figures as filed, and that no new matter has been added by amendment.

Election/Restrictions

Applicant confirms the election of Claim 1-13 for further prosecution, and elected to withdraw claims 14-33 from further consideration. Applicant has with the current amendments cancelled certain of the withdrawn claims. Applicant reserves the right to reinstate one or more of the withdrawn claims by amendment in the event that a generic or linking claim is later allowed.

Claim Rejections – 35 USC 112

The Examiner has rejected Claim 11 under 35 USC 112, second paragraph, as being indefinite in use of the term "nadir". Applicant traverses.

The term "nadir" is well known in the lighting industry and art. It is so well known that there are numerous examples of prior US patents that have issued with claims that include the term and with specifications that have not defined the term. Examples include: US Patents 4,006,355, 4,027,151, 4,085,318, and others.

One reference describes "nadir" as "an imaginary line extending vertically down, directly below the photometric center of a luminaire lamp, designated as 0° vertical angle" (Glossary page for Citizens for Responsible Lighting website, viewable at: http://members.aol.com/ActionCRL/glossary.htm). A copy of the title page and printed page 6 showing the definition of "nadir" is enclosed.

Another reference describes "nadir" as "(i)n the lighting discipline, nadir is the angle pointing directly downward from the luminaire, or 0 degrees. Nadir is opposite the zenith." (Glossary page for Light Research Center website, viewable at: http://www.lrc.rpi.edu/programs/nlpip/lightinganswers/lightpollution/glossary.asp). A copy of

the title page and printed page 16 showing the definition of "nadir" is enclosed.

Consequently, Applicant contends that the terms and its meaning are well known in the lighting art, making the use of the term definite and distinct in regard to Applicant's invention.

Claim Rejections – 35 USC 102

Claims 1-3, 5 and 9-10 are rejected as anticipated by McReynolds, Jr. (US 4,028,542). Applicants respectfully request reconsideration of the allowability of the claims and withdrawal of the rejection in view of the amendments made thereto and the remarks that follow.

Applicants have amended Claim 1 to require that each of the reflector elements has an asymmetric shape.

McReynolds shows a lamp positioned within a rectalinear luminaire having non-transparent front, back and side panels, and an open or transparent bottom opening. The luminaire has an upper reflector 20 disposed above the lamp, and a pair of segmented reflectors 22 and 24, each having the horizontal cross-sectional shape of a parabola. The reflectors of McReynolds do not substantially surround the lamp, as shown in Fig. 4 where a substantial portion, almost a third, of the area surrounding the lamp (at the support 18 end of the lamp) is not surrounded by a reflector. Consequently, a significant portion of the light from McReynolds is unreflected by a reflector, and therefore the reflector elements are not disposed "in a manner substantially surrounding" the lamp, as required in Claim 1.

Applicant's Claim 2 has been amended to provide that all of the light reflected from the reflector elements is reflected at substantially the same angle from nadir. Fig. 7 of McReynolds does not show the angle of reflection from nadir. Rather, Fig. 2 of McReynolds shows that the portions of light reflecting from different segments 38, 40, 42, and 44 of the reflectors are reflected at substantially different angles from nadir (vertical). Applicant therefore requests withdrawal of this rejection with respect to Claim 2.

Applicant's claim 5 has been canceled without prejudice.

Applicant's Claims 9 and 10 have been amended to provide that the reflector elements are placed in locations symmetrically and asymmetrically around the light source, respectively. With respect to Applicant's Claim 9, McReynolds might be construed to show a pair of reflectors that are positions to be symmetrical about an axis passing horizontally through the center of the luminaire, but they are not disposed in locations that are symmetrical about the lamp. Applicant

therefore requests withdrawal of this rejection with respect to Claim 9.

Applicant's Claims 12 and 13 have been amended to provide that the plurality of cross-sections through the vertical and horizontal planes of the reflector elements are of different sizes. In contrast, McReynolds discloses symmetric reflectors that have a plurality of vertical or horizontal cross-sections that are of the same size.

Claim Rejections – 35 USC 103

Claims 4, 6, 7, 12 and 13 are rejected as obvious over McReynolds, Jr. in view of Grindle et al. (US 4,254,456). Applicants respectfully request reconsideration of the allowability of the claims and withdrawal of the rejection in view of the amendments made hereto and the remarks that follow.

Applicant at the outset contends that the Examiner has failed to make out a *prima facie* case of obviousness in the combination of these references to obviate Applicant's claims. The Examiner has not pointed to any description in either McReynolds or in Grindle that would motivate a person of ordinary skill to combine these references. McReynolds teaches a lamp for providing lighting directly below the luminaire, through the bottom opening, by reflecting light off of the top concave reflector 20 and the two parabolic side reflectors 22 and 24. Grindle also discloses a luminaire configured to distribute the lighting directly below the luminaire, with the objective of shielding the lamp from direct view of the worker below the luminaire by use of a confronting reflector 5 below the lamp. There is no teaching or suggestion in McReynolds to make such an improvement. Rather, it appears, the Examiner has sought out a reference to combine with McReynolds based upon the Applicant's description of the invention. The Examiner can not use the Applicants' claimed invention as a blueprint for selecting features from the prior art to construct the claimed invention (see Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985) and In re Fine, 837 F.2d 1071, 5 USPQ2d. 1596 (Fed Cir. 1988)). Consequently, the Examiner has not made a proper §103 rejection.

Even if, for the sake of argument, these references were to be combined in some reasonable fashion, their combined disclosure would not anticipate or make obvious Applicant's invention as recited in amended Claim 1. Applicant's amended Claim 1 requires that each reflector element have an asymmetric shape, whereas each of the reflectors of McReynolds and Grindle are symmetric. There is no disclosure or suggestion, in either reference or in

combination, of this feature of Applicant's invention. Further, Claim 2 requires that the light reflected from the reflectors not reflect off of any other reflector element. Grindle relies on the positioning and shape of the auxiliary reflector 5 to further reflect the light off of the rear reflector portion R1 of the reflector 4. Presumably this important feature of Grindle should be a required element in a luminaire that is constructed as a combination of McReynolds and Grindle.

Applicant's new independent Claim 35 and 41

In Applicant's new independent Claim 35, the plurality of reflector elements are positionable to surround the light source so that the front surface of a first reflector elements is separated from the back surface of the second reflector element by an opening, through which the light that has been emitted by the light source above the bottom edges will be emitted after reflecting off of the front surface of the first reflector element.

In Applicant's new independent Claim 41, each of the plurality of reflector elements have a front reflective surface and a back surface, an inner portion that is disposed a first radial distance from the center, and an outer portion disposed a second radial distance from the center that is greater than the first radial distance, wherein the front surface of the outer portion of the first reflector surface faces toward the back surface of the inner portion of the second reflector element across an opening there between, and wherein emitted light from the center of the reflector assembly that reflects off of the front surface of the first reflector element, passes through the opening between the outer portion of the first reflector element and the back surface of the second reflector element.

McReynolds and Grindle, either alone or in combination, fail to teach or make obvious these elements of the claimed invention.

Finally, Applicant notes that the invention described in claim 8, which the Examiner had indicated was allowable, has been amended to further provide for four asymmetric reflector elements that are placed in locations symmetrically arranged in ninety degree increments around said light source.

Conclusion

Applicants believe it has provided a complete response to the office action, and that the present invention as claimed clearly distinguishes the teachings of the prior art of record. Applicants request a prompt allowance of all claims.

Respectfully submitted,

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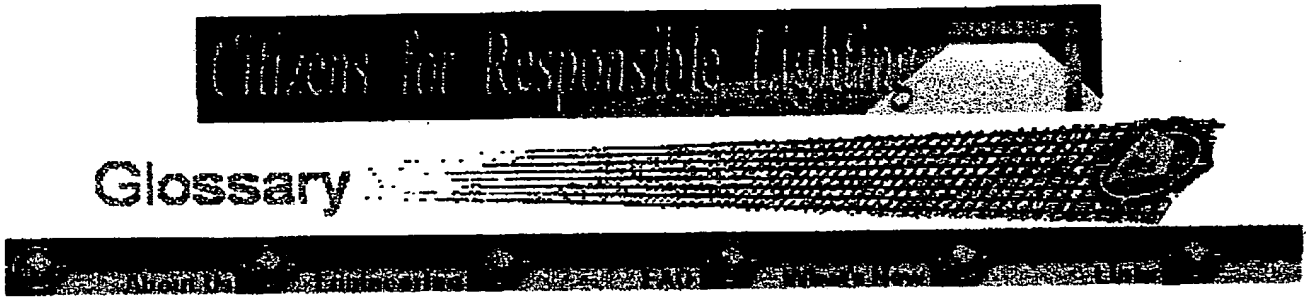
February 17, 2006

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The following terms are commonly used in illuminating engineering and are ir you may gain a more comprehensive knowledge of the language used in t These terms may be incorporated verbatim into the definition section of any code like zoning regulations or lighting ordinances.

It is highly recommended the wording of these definitions not be chang performed with the consultation of a certified engineer or expert in the field of il engineering. Terms that are not technically correct add confusion and enforced. All terms included below are not appropriate for every lighting code are included for your educational benefit.

**Arc Lamp**
A discharge lamp in which the light is emitted by an arc discharge or by its electrodes. electrodes can be either of carbon (operating in air) or of metal (operating in a pressurized ga

**Arc Tube**
An envelope, usually quartz or ceramic that contains the arc of a discharge light source.

**Atmospheric Transmissivity**
The ratio of the directly transmitted flux incident on a surface after passing through unit thickr atmosphere to the flux that would be incident on the same surface if the flux had passed vacuum. (Similar to the extinction coefficient in astronomy)

**Average Luminance**
'Luminance' is a property of a geometric ray. Luminance as measured by conventional averaged with respect to two independent variables – area and solid angle (steradian). Bot defined for a complete description of a luminance measurement. Standard metric for meas candela per square meter ($cd/m^2$) or footlambert (fl). $Cd/m^2$ is preferred.

**Baffle**
An opaque or translucent element to shield a source from direct view at certain angles, to block unwanted light, or to reflect and redirect light. Note: Helps with reducing impact of fl and flood lighting of large areas.

**Ballast**
A transformer device equipped with starting circuitry required by electric discharge light sc fluorescent or HID lamps to regulate voltage and current supplied to the lamp during st manage voltage at constant levels to sustain an electrical arc passing through atomiz

stability is best with the ceramic metal halide lamp. Generally available with correl temperatures of 3000 K or 4000 K.

**Nadir**
An imaginary line extending vertically down, directly below the photometric center of a lu lamp; designated as 0° vertical angle. Nadir is the lowest point on the surface of a sphere.

**Photocell**
An light sensing device used to control the electrical power distributed to luminaires in re detected ambient light levels.

**Position Factor**
The light output of the lamp in a certain position divided by the light output of the lamp in th position.

**Pulse-start Metal Halide Lamp**
Metal halide lamps that operate in systems incorporating a high voltage ignitor to high pres systems. Pulse-start systems provide significantly higher efficiency and lower light loss fa traditional metal halide systems.

**Reflector**
A piece of material with a reflective surface that directs light in a desired direction from a lumi

**Refracting Lens**
A curved or prismatic lens assembly that bends the emission angle of light rays in a desire from a luminaire.

**Underwriters Laboratories**
Commonly referred to as "UL". An independent organization whose responsibilities are e standards and rigorous testing of electrical and other consumer products. When products p tests, they can be labeled advertised as being "UL listed."

**Uniformity**
A measure describing the variation of illuminance (or luminance) over a given plane expres ratio of either the maximum to minimum illuminance or the average to minimum illuminance.

**Unit Power Density (UPD)**
A measure of efficiency commonly applied as a means to evaluate the electrical power con the rated lamp input power of a lighting system intending to illuminate a specific area. Thi commonly expressed as watts per square or linear foot. UPD is the same as lighting pow (LPD) used in some energy codes and standards.

**Upward Wasted Light Ratio (UWLR)**
The ratio of total direct uplight emitting at and above the horizontal plane divided by all dowr light over a given defined illuminated area.

**Visible Light Meter**
A hand held portable photometer used to measure illuminance in lux or footcandles (or bo referred to as an 'illuminance meter' or a 'light meter.'

**Warm-up Time**

NLPIP Lighting Answers

Volume 7 Issue 2

March 2003

Light Pollution

## Glossary

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| **A-lamp** | The incandescent lamp most commonly used in North American households. The "A" designation refers to the lamp's bulbous shape. |
| **Ambient temperature** | The temperature of the surrounding air that comes into contact with the lamp and ballast. Ambient temperature affects the light output and active power of fluorescent lamp/ballast systems. Each fluorescent lamp-ballast system has an optimum ambient temperature at which it produces maximum light output. Higher or lower temperatures reduce light output. For purposes of lamp/ballast tests, ambient temperature is measured at a point no more than 1 meter (3.3 feet) from the lamp and at the same height as the lamp. |
| **Amplitude** | The maximum absolute value attained by a periodic wave. |
| **ANSI code** | American National Standards Institute (ANSI) code that indicates the electrical operating designation of the lamp, which must match that of the ballast. |
| **Aperture** | The diameter in the opening of a downlight, in inches (in.). Sometimes manufacturers will round up to the next whole-inch increment. |
| **Aperture diameter** | The diameter of a reflector cone opening, expressed in inches. |
| **Apparent power** | The product of root-mean-square (rms) voltage and rms current. |
| **Application** | The use to which a lighting system will be put; for example, a lamp may be intended for indoor residential applications. |
| **Arc tube** | An envelope, usually quartz or ceramic that contains the arc of a discharge light source. |
| **Average rated life** | The number of hours at which half of a large group of product samples fail under standard test conditions. Rated life is a median value; any lamp or group of lamps may vary from the |

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| | a fixture socket. |
| **Minimal erythema dose (MED)** | The quantity of ultraviolet radiation (expressed in Joules per square meter) required to produce the first perceptible, redness reaction on human skin with clearly defined borders. MED can vary significantly depending on factors such as skin pigmentation. |
| **Minimum ambient temperature** | The minimum temperature at which a compact fluorescent lamp (CFL) product is warranted to start. |
| **Minimum dimmed level** | The lowest dimmed level achieved by a ballast, expressed as a percentage of that ballast's maximum light output. |
| **Minimum load requirement** | The minimum power required for an occupancy sensor to operate properly. |
| **Minimum required efficacy** | The minimum lamp efficacy required by EPACT, expressed in lumens per watt (LPW). |
| **Minimum starting temperature** | The minimum ambient temperature at which a ballast will reliably start fluorescent lamps. |
| **Monochromatic** | For light, consisting of a single wavelength and having a very saturated color. |
| **Multitap** | A passive distribution component composed of a directional coupler and a splitter with two or more output connections. |
| **Nadir** | In the lighting discipline, nadir is the angle pointing directly downward from the luminaire, or 0°. Nadir is opposite the zenith. |
| **Noncutoff luminaire** | IESNA classification that describes a luminaire light distribution in which there is no candela limitation in the zone above maximum candela. (See also cutoff classification and cutoff angle.) |
| **Open-circuit voltage** | The voltage applied across the output terminals of a ballast when no load is connected. Open-circuit voltage is the voltage applied across a lamp circuit to start the lamp. After starting, the voltage rapidly decreases and stabilizes at the operating voltage. |
| **Operating cycle** | The frequency with which lamps are cycled on and off. |
| **Operating electrode voltage** | The voltage that a ballast supplies to a lamp's electrodes. |